

Hei Tautoko i te Marautanga Pāngarau

Te Tauira me te Pānga





Wāhanga 1

Ngā Kōrero Whānui



He Kupu Whakataki

Ko te kaupapa ia o tēnei pukapuka, ko te āta whakaatu i ngā huatau matua o tēnei wāhanga matua o te pāngarau, te Tauira me te Pānga, me ngā whanaketanga ako, hei ekenga taumata mā ā tātou ākonga. Āpiti atu ki tēnā, ko te whakaatu i ētahi ngohe e hāngai ana ki tēnā taumata ki tēnā taumata o te marautanga, me ngā hononga ki te Mahere Tau¹ me ngā Whanaketanga Pāngarau².

Ko te Tauira me te Pānga tētahi tūāpapa matua o te pāngarau. Kei roto te Tauira me te Pānga i ngā wāhanga katoa o te pāngarau – te Tau, te Ine, te Āhuahanga, te Tūponotanga me te Tauanga. Ko te whakaaro taurangi kei te pūtake o te Tauira me te Pānga, arā, te whakawhānui i ngā tikanga tau kia whai wāhi mai tēnei mea te taurangi. E whai ake nei ētahi tauira, mai i ngā whenu o te marautanga pāngarau.

main idea

tasks/activities
Number Framework

algebraic thinking

variable

¹ Tirohia: *Tē Poutama Tau, Pukapuka Tuatahi. Tē Mahere Tau*. Papaioea: He Kupenga Hao i te Reo (2011).

² Tirohia: *Whanaketanga Pāngarau: He aratohu mā te pouako*. Tē Whanganui-a-Tāra: Tē Tāhuhu o te Mātauranga. (2010).

Te Tau

E tino hono ana te Tau me te Taurangi, ā, he mea nui kia mārama te ākonga ki te whakaaro whakarea (Kaupae 6, 7, 8 o Te Mahere Tau), e eke ai rātou i ngā taumata o tēnei wāhanga o te pāngarau, te Taurira me te Pānga, e pakari anō ai te whakaaro taurangi. Hei tauira o te hononga o te Taurira me te Pānga ki te whenu tau.

multiplicative thinking
algebraic thinking

He pānga whakarea kei waenganui i te taurunga me te tauraro o ngā hautau ōrite.

multiplicative relationship, equivalent fractions

taurunga	3	6	9	12	15	$\div 3, \times 4$	$\div 4, \times 3$
tauraro	4	8	12	16	20		

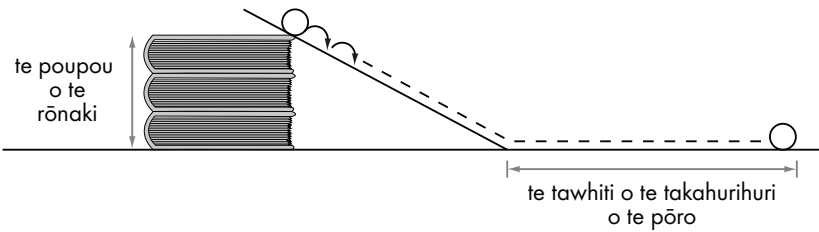
E tino kitea ana tēnei mea te tauira i roto i tā tātou pūnaha tau:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Te Ine

1. Ka inea te poupou o te rōnaki me te tawhiti o te takahurihuri o te pōro kia kitea ai te pānga o tētahi ki tētahi.

slope



2. He pānga whakarea kei waenganui i ngā waeine o tā tātou pūnaha ngahuru.

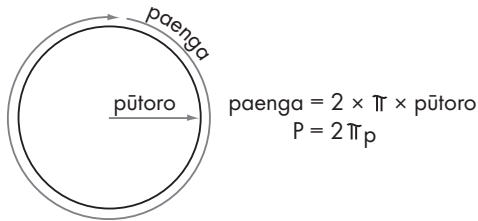
metric system

mm	cm	m	km
1000	100	1	.001
$\times 10$	$\times 100$		

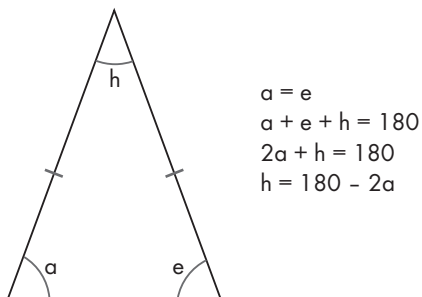
Te Hanga

1. E taea ana te pānga kei waenganui i ētahi āhuatanga āhuahanga te tuhi hei whārite taurangi. Hei tauira, ko te pānga kei waenganui i te pūtoro me te paenga o tētahi porowhita.

geometric properties
algebraic equation



2. Hei tauira anō, ko ngā pānga kei waenganui i ngā koki o tētahi tapatoru waeite:



Te Tūponotanga

Ko te pānga kei waenganui i te maha o ngā ingoa ka whakaurua ki tētahi tūpakonga matapōkere, me te tūponotanga ka puta tō ingoa.

random selection



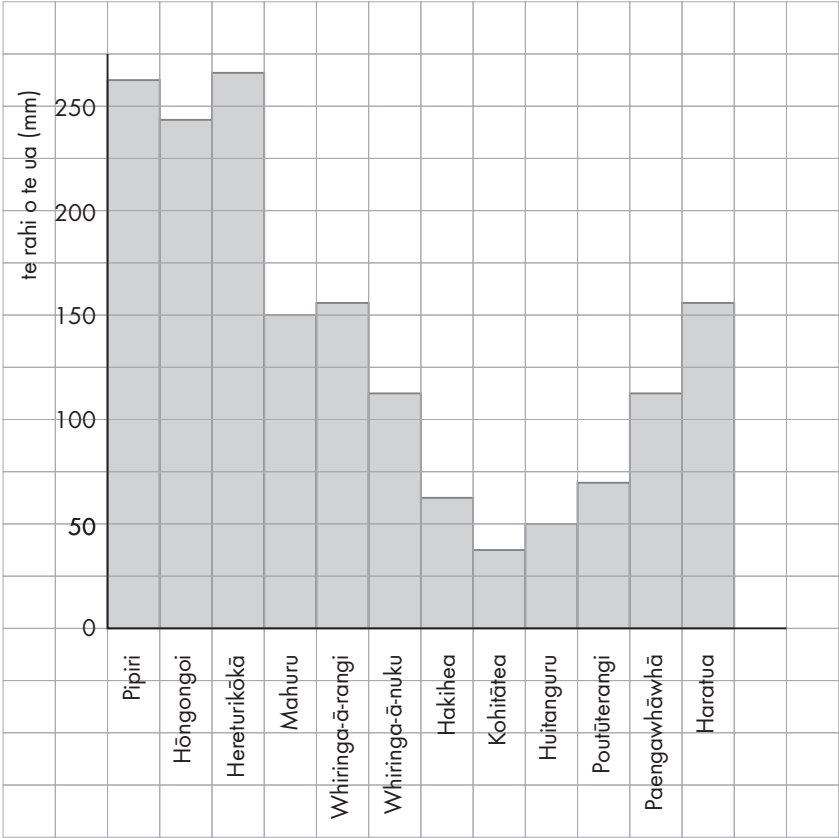
Mēnā e 6 ngā ingoa, ko te $\frac{1}{6}$ te tūponotanga

Mēnā 100 ngā ingoa, ko te $\frac{1}{100}$ te tūponotanga

Te Tauanga

He pānga kei waenganui i te wā o te tau me te kaha heke o te ua. Ko te mahi a ngā pūkenga āhuarangi, he tiroiro i ngā tauira huarere i te takanga o ngā tau maha.

climatologist, weather patterns





Ngā Huatau Matua o te Tauira me te Pānga

E whai ana ēnei huatau matua i tā Van de Walle (2007)³.

big ideas

1. Ko ngā tikanga o roto i tā tātou pūnaha tau me ngā paheko tau, ka taea te whakawhānui, mai i tētahi horopaki motuhake kia hāngai ki ngā horopaki whānui tonu. Hei tauira:

number operations
generalise

horopaki motuhake: Ka hokona e Huriwai te 20 rita kōhinu mō tōna motukā. Ko te \$2.15 te utu ā-rita. Hei tātai i te utu o tana kōhinu, ka whakareatia te 2.15 ki te 20, ka \$43.00.

specific context

horopaki whānui: Ahakoa te rōrahi o te kōhinu e hokona ana, ka whakareatia ki te utu ā-rita hei tātai i te tapeke o te utu.

general context



2. Ka whakamahia he tohu hei whakaatu i ngā pānga kei waenganui i ngā taurangi o roto i tētahi horopaki whānui. Hei tauira:

variable

horopaki whānui: Ahakoa te rōrahi o te kōhinu e hokona ana, ka whakareatia ki te utu ā-rita hei tātai i te tapeke o te utu.

te whakamahinga tohu: $ur \times rk = ut$ (ur = utu ā-rita, rk = rōrahi kōhinu, ut = utu tapeke)

3. Ko ngā tohu o roto i tētahi whārite hei whakaatu taurangi. Ko te taurangi tētahi āhuratanga ka rerekē haere (ka piki, ka heke), ka taea rānei te whakarerekē. Hei tauira:

$ur \times rk = ut$ (ur = utu ā-rita, rk = rōrahi kōhinu, ut = utu tapeke)

- Ko te rōrahi kōhinu e hokona ana tētahi taurangi. He rerekē te rōrahi kōhinu ka hokona e tēnā, e tēnā (rk).
- Ko te utu ā-rita o te kōhinu tētahi taurangi. Ka piki, ka heke te utu ā-rita o te kōhinu (ur).

Ko te utu tapeke tētahi taurangi (ut). He rerekē te uku tapeke ka utua e tēnā, e tēnā (e whakawhirinaki ana ki te rōrahi e hokona ana me te utu ā-rita).

dependant

4. He huhua te kitea o te tauira i roto i ngā wāhanga katoa o te pāngarau me tua atu. E taea ana ēnei tauira te whakamārama, te whakaroa, te whakawhānui hoki. Hei tauira:

	ngā horopaki motuhake					te whakawhānuitanga
te rōrahi kōhinu e hokona ana (rk)	1	2	3	4	5	uk
te utu tapeke (ut)	\$2.15	\$4.30	\$6.45	\$8.60	\$10.75	$\$2.15 \times uk$

5. Ko te pānga, koia te hononga, te ture rānei kei waenganui i ētahi taurangi e

³ Van de Walle, J.A. (2007). *Elementary and Middle School Mathematics: Teaching Developmentally*. Boston: Pearson.

rua. Hei tauira, ko te pānga kei waenganui i te rōrahi o te kōhinu e hokona ana me te utu tapeke. Ka whakaaturia tētahi pānga ki te kupu, ki te tohu, ki te tūtohi, ki te kauwhata hoki. Hei tauira:

mā te kupu:

Whakareatia te rōrahi kōhinu e hokona ana ki te utu ā-rita hei tātai i te utu tapeke.

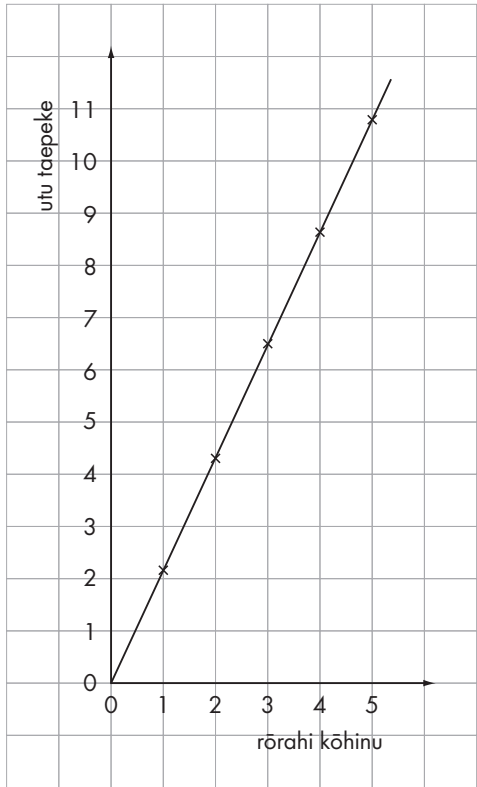
mā te tohu:

$rk \times ur = ut$ (rk = rōrahi kōhinu, ur = utu ā-rita, ut = utu tapeke)

mā te tūtohi:

te rōrahi kōhinu e hokona ana	1	2	3	4	5
te utu tapeke	\$2.15	\$4.30	\$6.45	\$8.40	\$10.75



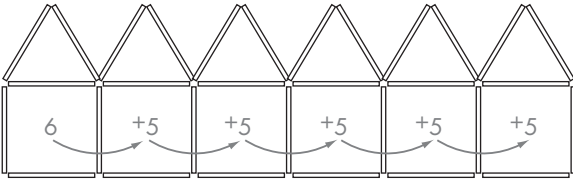
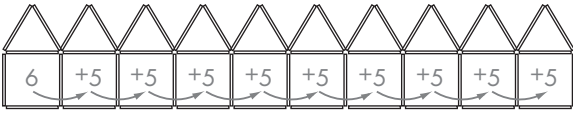
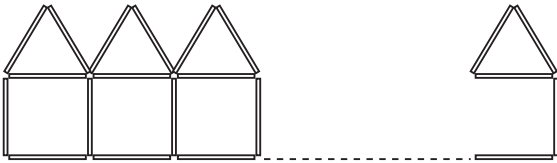
mā te kauwhata:





Te Mahere Tau me te Whakaaro Taurangi

E tino hono ana te mātauranga me ngā rautaki tau me te whakaaro taurangi. E whai ake nei ētahi tauira o ēnei hononga⁴:

Te Kaupae o te Mahere Tau	He tauira rapanga me te rautaki whakaoti	He tauira whakaahuahanga
3 Whanaketanga 1e	Ka whakaroa tauira māmā, ā, ka tatau pānga tahi i te katoa o ngā huānga o roto.	
4 Whanaketanga 1e	Ka whakaroa tauira māmā, ā, ka tatau ā-rōpū i te maha o ngā huānga o roto.	
5 Whanaketanga 2e	Ka whakaroa tauira, ā, ka whiriwhiri i te maha o ngā huānga o roto mā te tāpiri tāruarua, mā te tatau māwhitiwhiti rānei.	 <p>Hei tātai i te naha o ngā rākau hei hanga i ngā whare e ono: E 6 mō te whare tuatahi, ā ka tāpiri i te 5 mō ia whare i tua atu i tērā. Arā $6 + 5 + 5 + 5 + 5 + 5 = 31$</p>
6 Whanaketanga 3e	Ka whakaroa tauira, ā, ka whiriwhiri i te maha o ngā huānga o roto mā te rautaki whakarea.	 <p>Hei tātai i te maha o ngā rākau hei hanga i ngā whare tekau: E 6 mō te whare tuatahi. E rima mō ia whare i tua atu i tērā (arā mō ngā whare e 9). $6 + (5 \times 9) = 51$</p>
7 Whanaketanga 4e	Ka huri kōaro i te pānga whakarea hei whiriwhiri i te whakaroatanga o tētahi tauira ka taea te hanga, ina mōhioia te maha o ngā huānga.	 <p>Hei tātai i te maha o ngā whare ka taea te hanga mēnā e 231 ngā rākau: Tāngohia te 6 mō te whare tuatahi, e 225 rākau e toe ana. Whakawehea te 225 ki te 5 (nā te mea e 5 ngā rākau hei hanga i ērā atu o ngā whare), ka 45. Arā: $(231 - 6) \div 5 = 45$ Nō reira e 46 katoa ngā whare e taea ana.</p>

⁴ He mea pūtake mai ētahi o enei kōrero i te pukapuka *Teaching Number through Measurement, Geometry, Algebra and Statistics*, nā Te Pou Take Kōrero i whakaputa (2007).

8.
Whanaketanga 5

Ka whakamahi, ka
rāwekeweke i ngā
pānga whakarea me ngā
ōwehenga kei waenganui
i ngā taurangi o tētahi taurira.

Ka whakaputa ture mō te tātai i te maha o ngā rākau,
te maha o ngā whare rānei. Hei taurira:

1.

ngā whare	1	2	3	4	10	wh	$(r-6) + 1$
ngā rākau	6	11	16	21	51	$(wh-1) \times 5 + 6$	r

2.

ngā whare	1	2	3	4	10	wh	$(r-1) + 5$
ngā rākau	6	11	16	21	51	$5wh + 1$	r

Ngā Tikanga Tau me te Taurangi

Ka puta te whakaaro taurangi i te whakawhānuitanga o te mātauranga me ngā rautaki o roto i tā tātou pūnaha tau. E whai ake nei he tauira o ngā tikanga tau, me te whakawhānuitanga o aua tikanga hei whakaaro taurangi⁵:

algebraic thinking

Te Tauira Tikanga Tau	Te Whakawhānuitanga	Te Whakamārama
TE TĀPIRI ME TE TANGO		
$6 + 0 = 6$	$a + 0 = a$	Ahakoa te tau, ina tāpiria te kore, ko taua tau tonu te otinga. (Ko te kore te tūmau o te tāpiritanga.)
$15 - 0 = 15$	$a - 0 = a$	Ahakoa te tau, ina tangohia te kore, ko taua tau tonu te otinga. (Ko te kore te tūmau o te tangohanga.)
$7 - 7 = 0$	$a - a = 0$	Ahakoa te tau, ina tangohia taua tau i a ia anō, ko te kore te otinga.
$3 + 5 = 5 + 3$	$a + e = e + a$	Karekau he take o te raupapa mai o ngā tauhono o tētahi tāpiritanga. (Ko te āhuatanga kōaro tēnei o te tāpiritanga.)
$13 + (7 + 28)$ $= (13 + 7) + 28$ $= 20 + 28$ $= 48$	$(a + e) + h$ $= a + (e + h)$	Karekau he take o te whakarōpū i ngā tau e tāpiria. ana. (Ko te āhuatanga herekore tēnei o te tāpiritanga.)

⁵ He mea pūtake mai ētahi o ēnei kōrero i: Van de Walle, J.A. (2007). *Elementary and Middle School Mathematics: Teaching Developmentally*. Boston: Pearson. whārangi 267.

TE WHAKAREA ME TE WHAKAWEHE

$3 \times 1 = 3$	$a \times 1 = a$	Ahakoa te tau, ina whakareatia ki te tahi, ko taua tau tonu te otinga. (Ko te tahi te tūmau o te whakareatanga.)
$24 \div 1 = 24$	$a \div 1 = a$	Ahakoa te tau, ina whakawehea ki te tahi, ko taua tau tonu te otinga. (Ko te tahi te tūmau o te whakawehenga.)
$13 \div 13 = 1$	$a \div a = 1 \ (a \neq 0)$	Hāunga te kore, ina whakawehea tētahi tau ki a ia anō, ko te tahi te otinga.
$5 \times 0 = 0$	$a \times 0 = 0$	Ahakoa te tau, ina whakareatia ki te kore, ko te kore te otinga.
$0 \div 4 = 0$	$0 \div a = 0$	Ina whakawehea te kore ki tētahi tau, ko te kore tonu te otinga.
$3 \times 5 = 5 \times 3$	$a \times e = e \times a$	Karekau he take o te raupapa mai o ngā tau e whakareatia ana. (Ko te āhuatanga kōaro tēnei o te whakareatanga.)
$4 + 4 + 4 = 4 \times 3$	$a + a + a = 3a$	Ahakoa te tau, e taea ana te tāpiritanga tāruarua o taua tau te huri hei whakareatanga.
$5 \times (20 \times 3.25)$ $= (5 \times 20) \times 3.25$ $= 100 \times 3.25$ $= 325$	$(a \times e) \times h$ $= a \times (e \times h)$	Karekau he take o te whakarōpū i ngā tau e whakareatia ana. (Ko te āhuatanga herekore tēnei o te whakareatanga.)
$6 \times 13 = 6 \times (10 + 3)$ $= 6 \times 10 + 6 \times 3$ $= 60 + 18$ $= 78$	$6(a + e) = 6a + 6e$	He ōrite te whakareatanga o ētahi tau ki te tapeke o te whakareatanga o ngā wāhanga o aua tau. (Ko te āhuatanga tohatoha tēnei o te tāpiritanga me te whakareatanga.)

He Tauira Mahere mō te Tauira me te Pānga

Taumata 1	Te Mātauranga Tauira me te Pānga	Te Whakaoti Rapanga	Te Reo Matatini o te Tauira me te Pānga
Whanaketanga 1a	<p>E mōhio ana ki te āhua o tētahi tauira tāruarua māmā.</p> <p>Ka tautohu i te pūtake o tētahi tauira tāruarua māmā (te wāhanga e tāruaruatia ana).</p>	<p>Ka hanga, ka whakaroa tauira tāruarua māmā. Kia whai wāhi mai ko:</p> <ul style="list-style-type: none"> • ngā tau; • ngā pū; • ngā tohu; • ngā momo āhua ahu-2, ahu-3 hoki; • ngā momo tangi; • ngā momo nekeneke. 	<p>E mōhio ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • tauira; • tāruarua; • pūtake; • huānga; • tuatahi; • tuarua ...
Whanaketanga 1e	<p>E mōhio ana ki te āhua o tētahi tauira raupapa māmā.</p> <p>Ka whakamārama i te tipu o tētahi tauira raupapa māmā.</p> <p>E mārama ana ki te pūmau o te tipu o tētahi tauira raupapa.</p> <p>E mōhio ana ki ngā momo tauira māmā ka puta i te taiao, ka puta hoki i ngā waihangatanga a te tangata. Hei tauira:</p> <ul style="list-style-type: none"> • Ko te āhua o te noho mai o ngā rau ki tētahi peka rākau. • Ko te aranga, te pikinga, te hekenga me te tōnga o te Rā. 	<p>Ka hanga, ka whakaroa tauira raupapa māmā.</p> <p>Ka whakawhiti i te ture mō tētahi tauira raupapa ki raupapatanga kē atu. Hei tauira:</p> <p>1, 5, 9, 13... 11, 15, 19, 23 ...</p> <p>Ka whakaroa tauira tāruarua, e rua ngā āhuatanga taurangirangi.</p> <p>Ka matapae huānga o roto i tētahi tauira tāruarua māmā.</p>	<p>E mōhio ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • tauira raupapa; • tipu; • pūmau; • ture.

Taumata 2	Te Mātauranga Tauira me te Pānga	Te Whakaoti Rapanga	Te Reo Matatini o te Tauira me te Pānga
Whanaketanga 2a	<p>E mōhio ana ki ngā tauira ka puta i te wāwāhitanga tāpiripiri o tētahi tau, me te whakaahua anō i aua tauira (pēnei i ngā tauhono takirua o tētahi tau).</p> <p>E mōhio ana ki ngā tauira tau ka puta i ētahi whakaahuanga māmā, pēnei i te anga tekau, te paparau me te anga pirepire.</p>	<p>Ka whakaatu pānga māmā ki tētahi hoahoa māmā, pērā i te hoahoa pere, te tūtohi me te kauwhata whakaahua.</p> <p>Ka whakaatu tauira tau ki ngā momo rauemi, pērā i te anga pirepire, te paparau me te rārangi tau, me te whakamārama anō i aua tauira.</p> <p>Ka whakawhiti i te whakaahuahanga o tētahi tauira tāruarua māmā. Hei tauira:</p> <p>(a, a, e, a, a, e ... ♥, ♥, ♣, ♥, ♥, ♣ ...</p>	<p>E mōhio ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • pānga; • wāwāhi; • tūtohi; • hoahoa pēre; • paparau; • kauwhata whakaahua; • rārangi tau; • anga pirepire.
Whanaketanga 2e	<p>Ka mārama ki ngā tauira honohono o roto i ngā rautaki wāwāhi tau māmā hei whakaoti tāpiritanga māmā, whārite tangohanga māmā. Hei tauira:</p> $+2 \left(\begin{matrix} 28 + 7 \\ = 30 + 5 \end{matrix} \right) -2$	<p>Ka whiriwhiri, ka whakamahi, ka whakamārama i te ture o tētahi tauira raupapa māmā, pānga māmā hoki.</p>	<p>E mōhio ana ki ngā kupu, ngā rerenga kōrero me ngā tohu hei whakamārama i te ture o tētahi tauira tau, o tētahi pānga māmā rānei. Hei tauira:</p> <ul style="list-style-type: none"> • He tāpiri i te 3 te tipu o tēnei tauira raupapa (+3): 2, 5, 8, 11 ... • Ka whakareatia te roa o tētahi tapa ki te 4 hei tātai i te paenga tapawhārite (tapa × 4 = paenga)

Taumata 3	Te Mātauranga Tauira me te Pānga	Te Whakaoti Rapanga	Te Reo Matatini o te Tauira me te Pānga
Whanaketanga 3a	<p>E mōhio ana ki te pūmautanga o te ture e puta ai tētahi tauira, tētahi pānga rānei.</p> <p>E mōhio ana ki ngā tauira o roto i te wāwāhitanga whakarea o tētahi tau, pērā i te whakaatu i ōna tauwehe toitū.</p> <p>Ka mārama ki ngā tauira honohono ka puta i te rautaki ‘tāpiritanga ōrite’ hei whakaoti tangohanga.</p> $+2 \left(\begin{matrix} 36 - 17 \\ 39 - 20 \end{matrix} \right) - 2$	<p>Ka whiriwhiri, ka whakamahi, ka whakamārama i te ture o tētahi tauira raupapa tau, pānga tau rānei, kia kotahi, kia rua rānei ngā paheko.</p> <p>Ka whiriwhiri, ka whakamahi, ka whakamārama i te ture e hāngai ana ki tētahi tauira āhuahanga.</p> <p>Ka whiriwhiri i te otinga o te tōrite e hāngai ana ki tētahi horopaki whaitake.</p>	<p>E mōhio ana ki ngā tohu tōrite nei me ngā tikanga e hāngai ana:</p> <p><, >, ≠, ≤, ≥</p> <p>E mōhio ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • pūmau; • wāwāhi; • tauwehe.
Whanaketanga 3e	<p>Ka tautohu i ngā taurangi o ngā pānga ka puta i tētahi horopaki whaitake.</p> <p>Ka mārama ki ngā tauira honohono o roto i ngā whārite whakarea māmā. Hei tauira:</p> $\begin{matrix} & \div 3 & \\ 36 \times 17 = 9 \times 9 & & \\ & \times 3 & \end{matrix}$	<p>Ka whakaatu i te ture o tētahi pānga hei whārite.</p> <p>Ka whakamahi rautaki taurangi hei whiriwhiri i ngā huānga o tētahi tauira, o tētahi pānga rānei.</p>	<p>E mōhio ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • taurangi; • whārite.

Taumata 4	Te Mātauranga Taurira me te Pānga	Te Whakaoti Rapanga	Te Reo Matatini o te Taurira me te Pānga												
Whanaketanga 4a	<p>E mōhio ana ki te āhua o te hononga o ngā taurangi o roto i tētahi pānga. Hei tauira:</p> <ul style="list-style-type: none">• $a = 2e$ Ina whakapikia te e mā te tahi, ka whakapikia te a mā te 2 <table><tr><td>a</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr><tr><td>e</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table> <p>E mōhio ana ki ngā tikanga o te whakamahi pū i tētahi whārite taurangi. Hei tauira:</p> <ul style="list-style-type: none">• $5p =$ whakareatia te p ki te 5• $\frac{p}{5} =$ whakawehea te p ki te 5 <p>Ka mārama ki ngā tauira honohono o roto i ngā huinga hautau ōrite. Hei tauira:</p> <div><div><div><div><div><div></div><div>$\times 9$</div></div><div><div>$\div 3, \times 5$</div><div>$\left(\frac{3}{5} = \frac{27}{45}\right)$</div><div><div>$\div 3, \times 5$</div><div>$\times 9$</div></div></div></div></div></div></div> <td><p>Ka whakaaturia te pānga māmā o ētahi taurangi e rua ki te whārite, ki te tūtohi, ki te takirua raupapa, ki te kauwhata anō hoki.</p></td> <td><p>E mārama ana ki ngā kupu nei:</p><ul style="list-style-type: none">• taurangi;• huinga takirua raupapa;• kauwhata rārangi;• tūtohi;• tuaka pae (tuaka-x);• tuaka pou (tuaka-y).<p>E mōhio ana ki te whakamāori kauwhata rārangi torotika.</p></td>	a	2	4	6	8	10	e	1	2	3	4	5	<p>Ka whakaaturia te pānga māmā o ētahi taurangi e rua ki te whārite, ki te tūtohi, ki te takirua raupapa, ki te kauwhata anō hoki.</p>	<p>E mārama ana ki ngā kupu nei:</p> <ul style="list-style-type: none">• taurangi;• huinga takirua raupapa;• kauwhata rārangi;• tūtohi;• tuaka pae (tuaka-x);• tuaka pou (tuaka-y). <p>E mōhio ana ki te whakamāori kauwhata rārangi torotika.</p>
a	2	4	6	8	10										
e	1	2	3	4	5										
Whanaketanga 4e	<p>E mōhio ana ki ngā tikanga paheko tau, pēnei i te āhuatanga kōaro, te āhuatanga herekore me te āhuatanga tohatoha.</p> <p>E mōhio ana ki te rerekē o te pānga rārangi torotika me te pānga rārangi kōpiko.</p>	<p>Ka whakamahi i ngā tikanga paheko tau hei whakaoti whārite taurangi.</p> <p>Ka whakaaturia te pānga o ētahi taurangi e rua ki te whārite, ki te tūtohi, ki te takirua raupapa, ki te kauwhata anō hoki.</p>	<p>E mārama ana ki ngā kupu nei:</p> <ul style="list-style-type: none">• pānga rārangi torotika;• pānga rārangi kōpiko.												

Taumata 5	Te Mātauranga Tauira me te Pānga	Te Whakaoti Rapanga	Te Reo Matatini o te Tauira me te Pānga
Whanaketanga 5	<p>E mōhio ana ki te tikanga o te rōnaki o te kauwhata rārangi ka hua mai i tētahi horopaki whaitake.</p> <p>E mōhio ana ki te whakaatanga o te rōnaki me te haukotinga-y i te whārite o tētahi pānga rārangi torotiki.</p>	<p>Ka matapae i te āhua o te kauwhata ka hua mai i te pānga o ētahi taurangi e rua i tētahi horopaki whaitake.</p> <p>Ka whakamahi i te whārite o tētahi pānga rārangi hei tuhi kauwhata.</p> <p>Ka whiriwhiri i te whārite o tētahi kauwhata rārangi, me te whakamārama anō i te hononga o ngā taurangi e rua o te kauwhata.</p>	<p>E mārāma ana ki ngā kupu nei:</p> <ul style="list-style-type: none"> • rōnaki; • haukotinga-y; • haukotinga-x.